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EXAMINER

HOM, SHICK C

ART UNIT	PAPER NUMBER
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2666

5

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/584,650

Applicant(s)

CHENG ET AL.

Examiner

Shick C Hom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: in page 1 line 8 delete "DMT" and insert --- Discrete Multi-tone DMT---, for clarity. In page 2 line 3 of the specification after the words "filed December 23, 1999" insert ---now abandoned---. In page 12 line 3 delete typo "transceiver 14" and insert ---transceiver 10--- and in line 4 delete "transceiver 10" and insert ---transceiver 14---.

Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Drawings*

3. The drawings are objected to because in Figs. 1-7 and 11, a brief descriptive label must be provided for each numbered block, e.g. in Figs. 1-2, provide labels for ---first DMT transceiver 10---, ---second DMT transceiver 14---, ---wall socket 28---, ---network interface device 32---, ---local CPE

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loop 50---; in Figs. 3 and 6, provide label for ---transmit symbol 120, 124, 128---; in Figs. 4-5, provide label for ---splitter 166, 186---, ---CO 12---, ---subscriber loop 170---, ---CPE loop 50---, ---customer premises 178---, ---ATU-R 154---; in Fig. 7, provide label for ---voice band 250---, ---upstream channel 354---, ---downstream channel 258---, ---home network frequency spectrum 262---; in Fig. 11, provide label for ---ADSL transceiver remote units 302---. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claims 10-12 and 22-33 are objected to because of the following informalities: In claim 11 lines 2 and 4, the words "a local area network communication link" and "a DMT communication link" seem to refer back to "a local area network communication link" and "a DMT communication link" recited in claim 10 lines 10 and 6, respectively. If this is true, it is suggested changing "a local area network communication link" and "a DMT communication link" to ---the local area network communication link--- and ---the DMT communication link---, respectively. In claims 23-26 line 1 delete "The apparatus" and

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insert ---The DMT transceiver remote unit--- because no apparatus has been recited in claim 22. In claim 27 line 7 after the word "DMT" insert ---transceiver---, for clarity. In claim 28 line 2, the words "a DSL central office unit" seem to refer back to "a DSL central office unit" recited in claim 27 line 5. If this is true, it is suggested changing "a DSL central office unit" to ---the DSL central office unit---. In claim 28 line 6 and claims 29-32 line 8 the words "a set of local area network carrier frequencies" seems to refer back to "a set of local area network carrier frequencies" recited in claim 27 line 11. If this is true, it is suggested changing "a set of local area network carrier frequencies" to ---the set of local area network carrier frequencies---. In claims 29-32 lines 2 and 3, the words "a DMT transceiver" and "a master" seem to refer back to "a DMT transceiver" and "a master" recited in claim 27 lines 3 and 4. If this is true, it is suggested changing "a DMT transceiver" and "a master" to ---the DMT transceiver--- and ---the master---, respectively. In claims 29-32 lines 4 and 5, the words "a transmit," "a receive," and "a transmit" seem to refer back to "a transmit," "a receive," and "a transmit" recited in claim 27 lines 7 and 7-8. If this is true, it is suggested changing "a transmit," "a receive," and "a transmit" ---the transmit---, ---the receive---, and ---the

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transmit---, respectively. In claims 29-32 lines 6, 6-7, the words "a first DMT" and "a second DMT" seem to refer back to "a first DMT" and "a second DMT" recited in claim 27 lines 9 and 9-10. If this is true, it is suggested changing "a first DMT" and "a second DMT" to ---the first DMT--- and ---a second DMT---. In claims 29-32 line 9, the words "a communication link" seem to refer back to "a communication link" recited in claim 27 line 12. If this is true, it is suggested changing "a communication link" to ---the communication link---. In claims 10, 22 line 1, claim 27 line 3, delete "DMT" and insert ---discrete multitone DMT---. In claim 12 line 1 delete "ADSL" and insert ---asymmetric digital subscriber line ADSL---. In claim 18 line 2, claim 27 line 1 delete "DSL" and insert ---digital subscriber line DSL---. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. Claims 2, 16-17, 31, 32, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 2-3 which recite "the central office discrete multitone transceiver" lacks clear antecedent basis because no central office discrete multitone transceiver have

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been previously recited in the claims and therefore the limitation is not clearly understood. In claim 16 lines 2, 3 and 3-4 which recite "the set of DMT carriers," "the DMT transceiver central office unit" and "the master DMT transceiver remote unit" lack clear antecedent basis. In claim 17 line 2 which recite "the slave DMT" and "the master DMT" lack clear antecedent basis. In claims 31-32, line 7 and claim 32 line 5 which recite "the DSL transceiver unit central office" lack clear antecedent basis and is not clear as to whether they're reciting ---the DSL central office unit--- of claim 27 line 5. In claim 34 lines 7 and 8 which recite "the slave" and "the master" lack clear antecedent basis.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 1-8, 10, 12, 17-18, 21-22, 24, 27, and 33-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Spruyt et al. (6,088,386).

Regarding claim 1:

Spruyt et al. disclose the local area network utilizing a plurality of discrete multitone transceivers comprising: a master discrete multitone transceiver capable of communicating with a central office; a slave discrete multitone transceiver in communication with the master discrete multitone transceiver (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem); and a set of carriers providing a communication link between the master discrete multitone transceiver and the slave discrete multitone transceiver, wherein the slave discrete multitone transceiver and the master discrete multitone transceiver coordinate the set of carriers (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the use of the pilot tone for coordination).

Regarding claim 10:



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Spruyt et al. disclose the local area network system utilizing a plurality of DMT remote units in communication with a central office providing digital subscriber line service comprising: a DMT transceiver central office unit; a master DMT transceiver remote unit connected to a local area network (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem); a set of DMT carriers providing a DMT communication link between the DMT transceiver central office unit and the master DMT transceiver remote unit; a slave DMT transceiver remote unit connected to the local area network; and a set of local area network carriers providing a local area network communication link between the slave DMT transceiver remote unit and the master DMT transceiver remote unit using timing derived from the set of DMT carriers providing a communication link between the master DMT transceiver remote unit and the DMT transceiver central office unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

Regarding claim 12:

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Spruyt et al. disclose the local area network system utilizing a plurality of ADSL remote units in communication with a central office providing digital subscriber line service comprising: an ADSL transceiver central office unit; a master ADSL transceiver remote unit connected to a local area network; a plurality of ADSL carriers having frequencies within an ADSL frequency spectrum providing an ADSL communication link between the ADSL transceiver central office unit and the master ADSL transceiver remote unit; a slave ADSL transceiver remote unit connected to the local area network (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem); and a set of local area network carriers providing a local area network communication link between the slave ADSL transceiver remote unit and the master ADSL transceiver remote unit using timing derived from the plurality of ADSL carriers providing a communication link between the master ADSL transceiver remote unit and the ADSL transceiver central office unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

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Regarding claim 18:

Spruyt et al. disclose the network system providing a local area network utilizing a plurality of DSL transceiver unit remotes in communication with a central office providing digital subscriber loop service comprising: a DSL transceiver central office unit; a master DSL transceiver remote unit connected to the local area network; a set of DSL carriers having frequencies within a DSL frequency spectrum providing a DSL communication link between the DSL transceiver central office unit and the master DSL transceiver remote unit; a slave DSL transceiver remote unit connected to the local area network (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem); and a set of local area network carriers utilizing carriers within the DSL frequency spectrum providing a local area network communication link between the slave DSL transceiver remote unit and the master DSL transceiver remote unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

Regarding claim 22:

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Spruyt et al. disclose the DMT transceiver remote unit for communicating with at least one other DMT transceiver remote unit and capable of communicating with a central office comprising: a DMT transceiver capable of communicating with the central office and with the at least one other DMT transceiver remote unit, wherein the DMT transceiver generates and receives time domain signals having a set of carriers (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem); and a controller in connection with the DMT transceiver, wherein the controller allocates a set of local area network carrier frequencies providing communication with the at least one other DMT transceiver remote unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

Regarding claim 27:

Spruyt et al. disclose the method for communicating with at least one other DSL transceiver remote unit and capable of communicating with a central office comprising: determining if a DSL transceiver remote unit having a DMT transceiver is a

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master, and if so, determining if there is communication with a DSL central office unit (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem), and if so, locking a transmit and a receive sampling clock of the DMT to a transmit sampling clock of the central office; aligning a first DMT transmit symbol of the DMT transceiver with a second DMT transmit symbol received from the central office (see col. 8 line 58 to col. 9 line 19 which recite the use of the CO clock and need for symbol alignment); and coordinating a set of local area network carrier frequencies with the at least one other DSL transceiver remote unit providing a communication link with the at least one other DSL transceiver remote unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

Regarding claim 34:

Spruyt et al. disclose the local area network utilizing a plurality of discrete multitone transceivers comprising: a first discrete multitone transceiver; a second discrete multitone transceiver in communication with the first discrete multitone

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transceiver; and a set of carriers providing a communication link between the first discrete multitone transceiver and the second discrete multitone transceiver (see col. 4 line 59 to col. 5 line 4 which recite the modem at the central office being the master of the remote terminal modem), wherein the slave discrete multitone transceiver and the master discrete multitone transceiver coordinate the set of carriers (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25 which recite the use of the asymmetric digital subscriber line, the discrete multi-tone modulation, the set of carriers for the upstream and downstream channels separated by frequency division multiplexing FDM, and the pilot tone for coordination and timing).

Regarding claim 2:

Spruyt et al. disclose wherein the set of carriers do not interfere with communication between the master discrete multitone transceiver and the central office discrete multitone transceiver due to symbol orthogonality (see col. 7 line 12 to col. 8 line 33 which recite the use of QAM modulation which have two orthogonal components, i.e. the real component and the imaginary component, to prevent interference).

Regarding claim 3:

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Spruyt et al. disclose wherein the master discrete multitone transceiver broadcasts a timing reference providing the slave discrete multitone transceiver a local area network timing reference to adjust a receive and a transmit sampling clock (see col. 3 line 26 to col. 4 line 6 and col. 4 line 59 to col. 5 line 4).

Regarding claim 4:

Spruyt et al. disclose wherein the slave discrete multitone transceiver aligns a first transmit symbol boundary with a second transmit symbol boundary from the master discrete multitone transceiver (see col. 3 line 26 to col. 4 line 6).

Regarding claim 5:

Spruyt et al. disclose wherein the local area network further comprises a plurality of slave discrete multitone transceivers (see col. 4 line 59 to col. 5 line 4).

Regarding claim 6:

Spruyt et al. disclose wherein the plurality of slave discrete multitone transceivers are in communication and in communication with the master discrete multitone transceiver utilizing the set of carriers (see col. 7 line 12 to col. 8 line 33).

Regarding claim 7:

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Spruyt et al. disclose wherein the master discrete multitone transceiver comprises an asymmetrical digital subscriber line transceiver remote unit (see col. 4 line 59 to col. 5 line 4 and col. 7 line 12 to col. 8 line 33).

Regarding claim 8:

Spruyt et al. disclose wherein the slave discrete multitone transceiver comprises an asymmetrical digital subscriber line transceiver remote unit (see col. 4 line 59 to col. 5 line 4 and col. 7 line 12 to col. 8 line 33).

Regarding claims 17, 21:

Spruyt et al. disclose wherein the set of local area network carriers are coordinated by the slave DMT transceiver remote unit and the master DMT transceiver remote unit (see col. 7 line 12 to col. 8 line 33 and col. 9 line 20 to col. 10 line 25).

Regarding claim 24:

Spruyt et al. disclose wherein the DMT transceiver remote unit is adaptable to exist as a master DMT transceiver remote unit or a slave DMT transceiver remote unit (see col. 4 line 59 to col. 5 line 4).

Regarding claim 33:

Spruyt et al. disclose the computer readable medium having stored therein instructions for causing a central processing



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unit to execute the method (see col. 1 lines 19-52 and col. 8 lines 13-33 which recite the use of a digital processor clearly anticipate the computer readable medium for executing the method).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35

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U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 9, 11, 13-15, 19-20, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spruyt et al. (6,088,386) in view of Foley (6,069,899).

For claims 9, 11, 13-15, 19-20, and 25-26, Spruyt et al. disclose the network described in paragraph 7 of this office action. Spruyt et al. disclose all the subject matter of the claimed invention with the exception of wherein the master discrete multitone transceiver is in communication with a discrete multitone transceiver located at the central office utilizing a set of carriers other than the set of carriers used for local area networking as recited in claim 9; wherein the set of local area network carriers providing a local area network communication link between the slave DMT transceiver remote unit and the master DMT transceiver remote unit are adjacent to the set of DMT carriers providing a DMT communication link between the DMT transceiver central office unit and the master DMT transceiver remote unit as in claim 11; wherein the set of local area network carriers providing the local area network communication link between the slave ADSL transceiver remote unit and the master ADSL transceiver remote unit are adjacent to the plurality of ADSL carriers providing the ADSL communication

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link between the ADSL transceiver central office unit and the master ADSL transceiver remote unit as in claim 13; wherein the ADSL frequency spectrum is comprised of the frequencies between 25 kHz and 552 kHz as in claim 14; wherein the set of local area network carriers utilizing a frequency spectrum is comprised of the frequencies between 552 kHz and 1.104 MHz as in claim 15; wherein the DSL frequency spectrum is comprised of carriers having center frequencies between 25 kHz and 552 kHz as in claim 19; wherein the set of local area network carrier frequencies are within a local area network frequency spectrum adjacent to a DSL frequency spectrum as in claim 26; and wherein the set of local area network carrier frequencies include idle carrier frequencies within a DSL frequency spectrum as in claims 20, 25.

Foley from the same or similar fields of endeavor teach that it is known to provide the master discrete multitone transceiver being in communication with a discrete multitone transceiver located at the central office utilizing a set of carriers other than the set of carriers used for local area networking; the set of local area network carriers providing a local area network communication link between the slave DMT transceiver remote unit and the master DMT transceiver remote unit are adjacent to the set of DMT carriers providing a DMT communication link between the DMT transceiver central office

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unit and the master DMT transceiver remote unit; the set of local area network carriers providing the local area network communication link between the slave ADSL transceiver remote unit and the master ADSL transceiver remote unit are adjacent to the plurality of ADSL carriers providing the ADSL communication link between the ADSL transceiver central office unit and the master ADSL transceiver remote unit; the ADSL frequency spectrum being comprised of the frequencies between 25 kHz and 552 kHz; the set of local area network carriers utilizing a frequency spectrum being comprised of the frequencies between 552 kHz and 1.104 MHz; the DSL frequency spectrum being comprised of carriers having center frequencies between 25 kHz and 552 kHz; and the set of local area network carrier frequencies are within a local area network frequency spectrum adjacent to a DSL frequency spectrum (see Fig. 4 and col. 6 lines 32-60 which shows the POTS, upstream, downstream, and home area network HAN frequencies being adjacent and between 25 kHz and 1.1 MHz), and wherein the set of local area network carrier frequencies include idle carrier frequencies within a DSL frequency spectrum (see Fig. 4 and col. 7 lines 7-22 which recite the spacing band being a "dead band" that is not occupied by signal

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clearly anticipate the idle carrier frequencies as in claims 20, 25).

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the master discrete multitone transceiver being in communication with a discrete multitone transceiver located at the central office utilizing a set of carriers other than the set of carriers used for local area networking; the set of local area network carriers providing a local area network communication link between the slave DMT transceiver remote unit and the master DMT transceiver remote unit are adjacent to the set of DMT carriers providing a DMT communication link between the DMT transceiver central office unit and the master DMT transceiver remote unit; the set of local area network carriers providing the local area network communication link between the slave ADSL transceiver remote unit and the master ADSL transceiver remote unit are adjacent to the plurality of ADSL carriers providing the ADSL communication link between the ADSL transceiver central office unit and the master ADSL transceiver remote unit; the ADSL frequency spectrum being comprised of the frequencies between 25 kHz and 552 kHz; the set of local area network carriers utilizing a frequency spectrum being comprised of the frequencies between 552 kHz and 1.104 MHz; the DSL

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frequency spectrum being comprised of carriers having center frequencies between 25 kHz and 552 kHz; the set of local area network carrier frequencies are within a local area network frequency spectrum adjacent to a DSL frequency spectrum and the set of local area network carrier frequencies include idle carrier frequencies within a DSL frequency spectrum as taught by Foley in the network of Spruyt et al.

The master discrete multitone transceiver being in communication with a discrete multitone transceiver located at the central office utilizing a set of carriers other than the set of carriers used for local area networking; the set of local area network carriers providing a local area network communication link between the slave DMT transceiver remote unit and the master DMT transceiver remote unit are adjacent to the set of DMT carriers providing a DMT communication link between the DMT transceiver central office unit and the master DMT transceiver remote unit; the set of local area network carriers providing the local area network communication link between the slave ADSL transceiver remote unit and the master ADSL transceiver remote unit are adjacent to the plurality of ADSL carriers providing the ADSL communication link between the ADSL transceiver central office unit and the master ADSL transceiver remote unit; the ADSL frequency spectrum being comprised of the

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frequencies between 25 kHz and 552 kHz; the set of local area network carriers utilizing a frequency spectrum being comprised of the frequencies between 552 kHz and 1.104 MHz; the DSL frequency spectrum being comprised of carriers having center frequencies between 25 kHz and 552 kHz; the set of local area network carrier frequencies are within a local area network frequency spectrum adjacent to a DSL frequency spectrum, and the set of local area network carrier frequencies include idle carrier frequencies within a DSL frequency spectrum can be implemented by allocating and using the frequencies of Foley in the network of Spruyt et al. The motivation for allocating and using the frequencies as taught by Foley in the communication network of Spruyt et al. being that it provides the added feature of providing a local area network using existing plain old telephone service POTS wiring at the customer premises.

***Allowable Subject Matter***

11. Claims 16, 23, and 28-32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph and objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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**Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

DesJardins discloses frequency decimated DMT modulation modem.

Verbueken discloses a method and modem for adaptive allocation of the pilot carrier in a multi-carrier system.

Murphy discloses communications system and method for reducing the effects of transmitter non-linear distortion on a received signal.

Reusens et al. disclose a method to allocate data bits, multi-carrier transmitter and receiver using the method, and related allocation message generator.

Jones discloses DSL rate adaptation.

13. Any response to this nonfinal action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306, (for Technology Center 2600 only)



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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (2600 Receptionist at (703) 305-4750).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

  
DASINGTON  
PRIMARY EXAMINER

SH

March 24, 2004